

trol is poor and the lack of emotional response makes these techniques less than ideal.

Microneurovascular surgery has spawned the most promising procedures. Cross-face microneural grafting to bring voluntary and involuntary input from the contralateral facial nerve can reanimate existing facial muscles if done within the first six months, or can be used to innervate free vascularized muscle transfers.

A two-stage procedure using a cross-facial-sural nerve graft from the normal to the abnormal side, followed in six to eight months by a free microneurovascular transfer of an appropriate muscle to the previously placed nerve graft and local vessels, has a high success rate—80% to 90%. Some reports have shown that almost half the patients regain some degree of independent control of the reanimated side. The ideal choice for motor unit is not resolved, but the gracilis (whole or in part) or the pectoralis minor produced the best results.

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Plastic Surgery for Nonwhites

THE DESIRE for aesthetic facial surgical procedures by non-white patients is increasing. Factors influencing this increase range from wishing to look less like a perceived ethnic prototype to the desire to resemble a star from the entertainment world.

By and large, Asian patients seek alteration of their eyelids and nose. Those of African and Malaysian background more often request a smaller nasal configuration.

The change in appearance from the hooded upper eyelid to a well-defined fold is often striking. Additionally, female patients report that applying eyelid makeup is easier. Methods vary but generally include surgical fixation of loose dermis to the underlying levator apparatus, establishing a new eyelid fold 6 to 9 mm superior to the eyelash margins.

Changes in nasal appearance usually involve elevating the nasal dorsum (profile), narrowing the alar bases (frontal) and providing a thinner, more defined nasal tip. Various alloplastic materials are currently in vogue for dorsal elevation, but these carry the risks of extrusion and displacement. Autogenous cartilage and bone grafts are more difficult to use but are more stable.

The methods used in nasal operations are not new, but are based on proven maneuvers—fitting the operation to the patient. As in all surgical procedures, careful patient selection, discussion of realistic expectations and skillful preoperative planning are essential.

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Keloid and Hypertrophic Scar

PENETRATING WOUNDS of the skin elicit a cascade of biologic and biochemical events including inflammation and a fibroproliferative response that results in the deposition of collagen, noncollagenous proteins and proteoglycans. Scar tissue is the end product. The quality of a scar is directly related to the efficiency of the regulation of collagen production during wound healing and, specifically, the balance between new collagen synthesis and collagen degradation during the later stages of the process. Under certain circumstances, the equilibrium between collagen anabolism and catabolism is imbalanced, resulting in overproduction of collagen. In the extreme, hypertrophic scar or keloid may result.

The biologic differences between hypertrophic scar and keloid have yet to be completely characterized. Traditionally, hypertrophic scar has been classified as exuberant scar production within the boundaries of the original wound. A scar that overgrows and spreads beyond the borders of the original wound is called a keloid.

Biochemical and morphologic studies of the fibrillar collagen ultrastructure, the nature of chemical cross-linking of collagen molecules and the cell types inhabiting keloid and hypertrophic scar were conducted by Knapp and co-workers. They found that collagen fibers and fiber bundles showed an inverse correlation between degree of organization and scar abnormality. In addition, the collagen in skin and mature scars was highly cross-linked while that of hypertrophic scar and keloid was progressively less so. Three types of fibroblast seemed to populate the scars, with their relative distribution varying among the scar types. They concluded that hypertrophic scar and keloid are not distinct pathologic processes but, instead, represent progressively more aberrant activity in the continuum of the wound healing response.

Other evidence suggests that keloid fibroblasts produce significantly more collagen per cell than do fibroblasts derived from normal skin and normal scar. It may be that keloid fibroblasts have lost the ability to respond to feedback inhibitory signals that normally regulate wound healing.

Among other elements in the production of hypertrophic scar and keloid, variation encountered in the microvascular regeneration of the wound bed with low oxygen and high carbon dioxide levels has been implicated as a factor in promoting excessive collagen deposition and scar. Others have shown that the extracellular matrix of the wound exerts a powerful effect on the biosynthetic activity of cells; a hypertrophic scar or keloid could develop as a result of abnormal turnover of the wound matrix during the healing process.

The traditional treatment of hypertrophic scar and keloid has involved five general approaches: surgical procedures, pressure, irradiation, corticosteroids and other drugs. Currently, intralesional injection of triamcinolone acetonide alone or in combination with surgical correction appears to be the most popular means of dealing with these scars. The precise mechanism by which corticosteroids influence an abnormal scar is not known. It may be that the steroids influence collagen synthesis in scars by enhancing catabolic aspects of